TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2020-07-03-7** **Date: 04-11-19**

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli

Source of Sample : Sample supplied by Department

Sample Condition : Satisfactory

Date of Receipt : 02-11-19

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 02-11-19

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	624	9249	84.1	15.9	8-22
0.075	1337	10586	96.2	3.8	0-5

Note:-

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Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
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CIVIL PRO BANGALORE Sig. Date

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID : **CP-RW-2020-07-03-7** **Date: 04-11-19**

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli

Source of Sample : Sample supplied by Department

Sample Condition : Satisfactory

Date of Receipt : 02-11-19

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Date of test : 02-11-19

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2020-07-03-7** **Date: 04-11-19**

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli

Source of Sample : Sample supplied by Department

Sample Condition : Satisfactory

Date of Receipt : 02-11-19

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Date of test : 02-11-19

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2020-07-03-7** **Date: 07-11-19**

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli

Source of Sample : Sample supplied by Department

Sample Condition : Satisfactory

Date of Receipt : 05-11-19

Type of Mix : BC-Plant (Bituminous Concrete)

Date of test : 05-11-19

Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : **CP-RW-2020-07-03-7** **Date: 08-11-19**

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli

Source of Sample : Sample supplied by Department

Sample Condition : Satisfactory

Date of Receipt : 05-11-19

Type of Mix : BC(Bitumenous Concrete)

Date of test : 05-11-19

Type of Binder : 60/70

% of Binder Used : 5.0%

Weight of Aggregate : 200.0 gm

Weight of Binder : 10.0 gm

Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.5	1.5	98.3	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : **CP-RW-2020-07-03-7** **Date: 08-11-19**

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli

Source of Sample : Sample supplied by Department

Sample Condition : Satisfactory

Date of Receipt : 05-11-19

Type of Mix : BC (Bituminous Concrete)

Date of test : 05-11-19

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

Note:-

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TESTS RESULTS ON STABILITY OF MIX

Lab ID : **CP-RW-2020-07-03-7** **Date: 08-11-19**

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli

Source of Sample : Sample supplied by Department

Sample Condition : Satisfactory

Date of Receipt : 05-11-19

Type of Mix : BC (Bituminous Concrete)

Date of test : 05-11-19

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.14	11.13	10KN(min)
2	Marshal flow at 60°C, mm	3.52	3.51	2-4
3	Percent air Voids	4.82	4.83	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.87	71.63	65-75
6	Density, g/cc	2.25	2.26	–

Note:-

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : **CP-RW-2020-07-03-7** **Date: 11-11-19**

Customer : Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.

Address : Kodigehalli Sub Division, BBMP, Bangalore.

Project Name : Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli

Source of Sample : Sample supplied by Department

Date of Receipt : 09-11-19

Type of Mix : BC (Bituminous Concrete)

Date of test : 09-11-19

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	470	469
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	6.00	6.20
4	Average percentage	%	6.1	

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Lab ID : **CP-RW-2020-07-03-7** **Date: 11-11-19**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 470

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.9	99.1	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.9	62.1	53-71
2.36	88	266	56.6	43.4	42-58
1.18	29	295	62.8	37.2	34-48
0.6	11	306	65.1	34.9	26-38
0.3	46	352	74.9	25.1	18-28
0.15	45	397	84.5	15.5	12-20
0.075	55	452	96.2	3.8	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 469

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.9	99.1	90-100
9.5	62	66	14.1	85.9	70-88
4.75	112	178	38.0	62.0	53-71
2.36	88	266	56.7	43.3	42-58
1.18	29	295	62.9	37.1	34-48
0.6	11	306	65.2	34.8	26-38
0.3	46	352	75.1	24.9	18-28
0.15	45	397	84.6	15.4	12-20
0.075	51	448	95.5	4.5	4-10

Note:-

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Quality Manager

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Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2020-07-03-7** **Date: 08-11-19**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address	:	Kodigehalli Sub Division, BBMP, Bangalore.
Project Name	:	Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli
Source of Sample	:	Sample supplied by Department
Sample Condition	:	Satisfactory
Date of Receipt	:	06-11-19
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	06-11-19

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**64**	60 to 70
2	Softening Point, °C	**51.2**	Min. 40°C
3	Ductility, cm	**98**	Min. 75cm
4	Flash point, °C	**245**	Min. 220°C
	Fire point, °C	**272**	

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****End of Report****

DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID	:	**CP-RW-2020-07-03-7** **Date: 11-11-19**
Customer	:	Assistant Executive Engineer, Kodigehalli Sub Division, BBMP, Bangalore.
Address	:	Kodigehalli Sub Division, BBMP, Bangalore.
Project Name	:	Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli
Source of Sample	:	Sample supplied by Department
Sample Condition	:	Satisfactory
Date of Receipt	:	09-11-19
Type of Mix	:	Tack coat
Date of test	:	09-11-19

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

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QC ABSTRACT

NAME OF WORK: Potholes Filling in Devinagara, Lottegollahalli and Surrounding Area in Ward No.08, Kodigehalli

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
2	BC	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
3	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1
4	TACK COAT	Rate of spread	One Test		1	1

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